The Impacts of Effective Supply Chain Management Practices and Banking Progress on Economic Growth in Southeast Asian Countries

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***Abstract*-The paper uses the GLS methodology to determine the correlation between supply chain practices, banking progress, and economic growth in Southeast Asian countries (except Singapore) on the author group database obtained from the World Data Progress Indicator (WDI) of the World Bank (WB) in the period 1998 - 2016. The results show that the increase in banking progress causes negative effects on economic growth while effective supply chain practices positively linked with economic growth. An imbalance between progress in the banking sector and the country's economic growth can lead to negative effects.**

Keywords; *Banking progress, Economic growth, GLS*

1. Background

In recent decades, the contribution of efficient practices of supply chain management and financial progress on economic growth has become an object of great interest which has caught the attention of economic researchers [12]. Financial progress comprises of financial intermediation and financial market progress. In which, the bank is part of the financial intermediary. Therefore, in the view of [1], banking progress is considered as one of the most considerable and decisive factors for economic growth in developing countries. The research by influential scholars has proved that the appropriate implementation and execution of supply chain practices add to the operational and financial performance of the banking institutions [31]. The debate about the relationship between financial progress and the country's economic growth can be found back in the work of [26] in the early twentieth century. The point of debate is whether financial progress has any influence on a country's economic growth and whether it has a positive or a negative effect. In his research, [25] pointed out that the banking system implementing supply chain practices is a decisive factor for economic growth due to the efficient role of banks in distributing savings, encouraging innovation, and financing effective investment [16]. The efficient supply chain practices promote collaboration among different financial institutions, their mutual sharing of operational strategies, and enable the considering financial institution to provide better financial services. Many research articles have been published in several research fields to analyze the impacts of supply chain (SC) practices on the banks' financial progress and the overall economic growth. Several studies conducted in this respect, represent a highly considerable linkage between the practices of supply chain management and the country's economic growth. Since financial progress in a country and its economic growth, according to [33], are dependent on the fact how objectives are set, how resources are allocated, and how efficient future directions have been determined, the significance of the practices of supply chain management cannot be ignored. Still, continuous research on the contribution of supply chain practices to economic growth is going on [15]. This paper tests the impacts of practices of supply chain management and financial progress on economic growth at strategic, operational, performance, and tactical levels. The effective supply chain practices ensure the quality of services, innovation, and the delivery of services in time, and customers' satisfaction [7]. In Southeast Asian countries, the implementation and execution of efficient supply chain practices in banks are proving to be a guarantee to the financial progress and thus economic growth. The efficient supply chain (SC) practices are making the services fast in speed, innovative and improved in quality.

[16], a neo-classical theorist has argued that the part of financial progress in the country's economic growth is enormous, especially banking progress to the country's economic growth in developing countries. The topic of the relationship between progresses in the country's banking sector, and its economic growth, has been found to be interrelated by researchers [20] and has many interesting results. There are three streams of controversy:

(1) Banking progress positively affects a country's economic growth and vice versa; (2) Progress in the country's financial institutions does not affect economic growth, and (3) Banking progress negatively affects economic growth.

If the banks in a country are working effectively, and their services are fast, better in quality, and innovation, their financial performance will be superior and make more contribution to the country's economic

growth. Long term research has proved that the banks which are implementing as well as executing supply chain (SC) practices in their operations and marketing are performing in a better way [34].

With the above arguments, the authors have taken data from Southeast Asian countries (except Singapore) using OLS and GLS methods to test the model to determine the correlation between financial progress and economic growth in Southeast Asian countries (excluding Singapore) and the impacts of sound and efficient practices of supply chain management on the country's economic growth.

2. Hypotheses development

There are many empirical studies on this topic to find out the direct cause, the impacts of supply chain management, and the influential trend of banking progress on economic growth. In actual, it has been argued that poor countries with a weak financial system are caught in a vicious cycle in both the country's banking sector and its stock market, leading to low economic efficiency and efficiency [20]. A low rate of economic returns leads to a low rate of financial growth [14]. Indeed, an inappropriately, inefficiently, and inadequately monitored financial system can be susceptible to the crisis, that imparts potentially deteriorating influences on the economy. On the contrary, an efficient, as well as effective financial system, having good progress in both the banking industry and the stock market, will provide better financial services, allowing the economy to increase growth [8]. The implementation and execution of supply chain (SC) practices make a financial system strong and efficient in the context of both the stock market and the banking sector. The efficient supply chain (SC) management ensures superior financial services and positively contributes to the country's economy [10]. Besides, financial progress on the basis of supply chain practices not only for the progress of the financial system but also for the poor, [9] in their research shows that financial progress assists the poor to keep up with the rest of the world economy faster.

Based on the theory of endogenous growth, [2] emphasizes that the progress of the financial system (the progress in the banking sector and the stock market) is an important driver of economic growth. In the long term, such as financial progress achieved by the execution of supply chain (SC) management practices can improve the rate of the country's economic growth through many channels. Such channels comprise of: providing information on possible investments, for effective capital allocation; overseeing companies and implementing corporate governance; risk dispersion; mobilize savings; expanding the exchange of goods and services, and transferring technology [19]. Since the efficient practices of the supply chain (SC) management strengthen the information system and make the allocation of capital resources effective. The supply chain practices help to minimize risks, to mobilize and distribute savings, and implement institutional policies effectively [22]. The results of empirical research on the financial contribution of supply chain management practices to the country's economy and on the relationship between financial progress in the country and its economic growth have been proved and classified into three groups in terms of the relationship direction that is the leading hypothesis relationship, the relationship following hypothesis and a feedback hypothesis relationship [23].

Research supports the leading hypothesis, such as [18] using data from 80 countries to analyze the effect of financial industry development implementing supply chain management practices on economic growth. GDP, with variables to measure for banking and stock market development. After controlling for other factors influencing economic growth found a strong positive relationship between banking development to economic growth [16, 22]. [5] strongly agree that well-functioning financial intermediation which is possible in the implementation and execution of supply chain management practices has a significant effect on economic growth. In empirical studies, many authors have used regression models with data in different countries to examine a wide range of relationships in macroeconomics, including the relationship between progress, long-term financial and economic growth [13]. With this approach, the researchers will average the variables over a long period to account for the variation in growth rates in countries.

However, other researchers have rejected the regression in many countries, claiming that differences between those countries are ignored and that the averaging of the variables affect the determinants. Economic growth. Therefore, in experimental studies [6] used the GMM model for tabular data in cross-border studies. Increase the relationship between financial progress within the supply chain system in a country and its economic growth. The results in these studies have given results very similar to the previous results that found positive effects not only of the efficient practices of supply chain (SC) management on the progress in the stock market and the banking sector but also on the effects of the progress in the stock market and the banking system on economic growth. The study also shows that opening up to trade promotes more economic growth as foreign banks have the opportunity to enter the domestic financial market, and the privatization of state-dominated banks increases credit growth is better. Having made the collaboration among different financial institutions and countries, strengthened the information system, and minimized the long-distance problem the supply chain practices have contributed a lot to the home financial system and market [29].

Contrary to the supply-driven hypothesis, the serial demand hypothesis states that progress finance does not affect economic growth, but rather, it is the economic growth in a country that encourages the financial sector to better provide services to stimulate economic growth. Like financial progress. Research on the relationship of banking sector progress and economic growth and applying endogenous growth theory found a causal relationship. The scholars are of the view that the efficient implementation and execution of supply chain management practices give remarkable operational and financial growth to the business organizations. In return, the growth in business organizations results in the progress of the financial systems (the stock market and the banking institutions), as it encourages the distribution of financial services [32]. One way from economic growth affecting the banking sector is the growth of deposits and credit to the private business and industrial sector. In contrast, within the supply chain credit is conveniently provided by banks to the private sector, and the size and efficiency of the banking industry have not had a significant influence on economic growth in Lebanon. In a study by [35] examines the causal relationship between a country's financial progress and its economic growth in East Asian areas on a panel data set provided by [4]. The study results throw light on the point that there is considerable evidence that economic growth, under the implementation of supply chain practices, helps finance progress. Economic growth will generate more demand for financial services so the financial system will evolve in response to economic demand and expansion because as economic activities develop, there will be demand. For both capital and liquidity. The supply chain practices promote the integration of resources, business procedures, collaboration among different institutions, suppliers, and customers [24]. For this purpose, up-to-date techniques, efficient personnel, and technology are required. More funds are required to acquire innovative techniques, services of efficient employees, and new technology. The need for these funds is fulfilled with the help of credits from financial institutions. Thus the implementation, as well as execution of efficient supply chain (SC) management practices, contributes to the financial growth of banking sectors in the country. In support of the continuity bridge hypothesis, [18] studied for the Chinese case alone and found that there exists a unilateral causal relationship from the country's economic growth to its financial progress in general and progress in the banking sector in particular. At the same time, the supply chain practices in the open trade also positively affect economic growth in China because economic growth will increase competition and efficiency in financial markets, as a result of economic growth. That is, the economy will increase its demand for capital and financial services. In the same period of study, a separate study in Malaysia using the VECM model, [3] found financial liberalization, through the deregulation of financial control policies had a favorable effect in stimulating the progress of the financial sector, and at the same time, economic growth with the implementation and execution of practices of supply chain (SC) management has had a positive impact on financial progress [30].

The feedback hypothesis states that the country's economic growth initially brings much convenience in the formation of financial markets and the progress of financial markets promotes a country's economic growth, so there exists a dual-sided relationship between financial progress and country's economic growth. The efficiency and effectiveness of the strategies and practices of the supply chain (SC) management positively contribute to the economic performance of a country which results in the superior performance of financial sectors. On the other hand, the effective use of supply chain practices heightens the financial progress of the country that consequently adds to economic growth [11]. [23] concluded that the supply leading hypothesis exists in the early stages of the economy, while the serial demand hypothesis prevails in the period after the economy grows. Thus, within the supply chain, the causal direction between the country's financial progress and its economic growth changes in the progress process. Financial progress through supply chain management practices can create real innovation through investments to help economic growth. The collaboration between business enterprises and financial sectors (the stock market and banking institutions) promotes the financial investment in the economy of the country [28].

The efficient strategies and practices of supply chain management enhance operational activities in different economic and business sectors. When the economy has already achieved growth, now the demand for financial products and services increases, then economic growth is in turn to stimulate the progress of the financial system. Thus, as proved by both the causal hypothesis and supply led hypothesis, the supply chain management strategies and practices are very significant in the mutual relationship between financial progress and economic growth [21]. However, this will be mainly related to the timing of the successful progress of industries in the economy, especially government policy. The causal relationship between financial progress and economic growth can be explained in two angles. First, from the perspective of the continuity demand hypothesis, as the economy develops, the demand for the economy for new and different financial services increases, and these needs are fulfilled passively. If the financial system does not develop on time corresponding to the needs of the economy. In the second view of the supply-led hypothesis, financial progress first generates real growth by allocating limited resources from small and medium savers to great investors. Thus, the practices of the supply chain along

with financial progress has played a positive role in the economic progress of the country around the globe.

3. Methodology

The paper uses panel data from 11 Southeast Asian countries from 1998 to 2016. Data collected from the World Progress Indicator (WDI) of the World Bank. To measure Banking progress, the author recommends using the following variable:

- PCB (Bank-to-GDP ratio of private sector credit outstanding): This variable does not include outstanding loans issued by non-bank financial institutions.

Besides, based on empirical studies on economic progress, the author proposes to use the following control variables in the model:

- GDPCG - Annual GDP per capita growth
- GE - The ratio of total government spending to GDP: measuring the stability of fiscal policy and the change of the economy.
- TO - Trade openness: calculated by the ratio of the total value of goods and services exported and imported to GDP.
- IN - Inflation rate: measured by the annual consumer price index growth, using the assessment of macroeconomic stability. It reflects the effectiveness of monetary policy and its effect on growth by influencing the savings and investment decisions of all economic sectors.
- GDP - Annual GDP growth: used to control a convergence effect
- ESCP – Effective supply chain practices: The ratio of time taken by the supplier and total lead time

The descriptive statistics table of the variables used in the study is presented in the following Table 1:

Table 1. Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
GDPCG	**1.43396**	**0.69609**	**-1.42231**	**2.60885**
GDPG	**1.66285**	**0.73383**	**-2.44533**	**2.79178**
GE	**2.51509**	**0.75522**	**1.24136**	**5.09729**
IN	**1.29471**	**1.25292**	**-4.09175**	**4.83048**
PCB	**3.52752**	**1.05688**	**0.41298**	**5.03308**
TO	**4.40303**	**1.49996**	**-1.78726**	**6.09041**
ESCP	**3.54124**	**1.36954**	**0.98325**	**5.36574**

Source: author's calculation

Variables are taken with natural logarithm to limit the difference in progress level as well as national size.

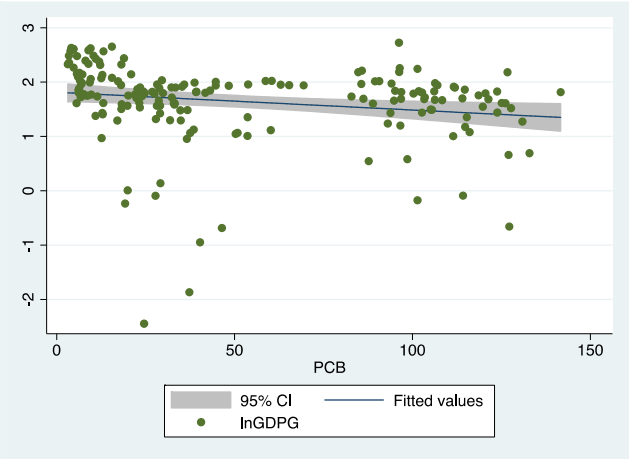

Figure 1. Banking progress and economic progress

The paper uses OLS and GLS estimation methods to determine the association between the progress in the banking sector and the country's economic growth. We have the following regression model:

$$LnGDPG_{i,t} = C_{it} + lnGDPCG_{i,t} + lnGE_{i,t} + lnIN_{i,t} + lnPCB_{i,t} + lnTO_{i,t} + ESCP_{i,t} + u_{i.t}$$

4. Results

The correlation coefficient matrix did not detect any variables with correlation coefficients> = 0.6. The variance magnification coefficient - VIF of the variables <10 shows that the multicollinearity phenomenon has not been detected in the regression model.

Table 2. Correlation coefficient matrix

	GE	IN	PCB	TO	GDPCG	ESCP
GE	1					
IN	-0.231	1				
PCB	-0.045	-0.3343	1			
TO	-0.0149	-0.2245	0.5502	1		
GDPCG	-0.2178	0.1003	-0.1831	-0.0278	1	
ESCP	0.2418	0.3652	0.4452	0.3214	0.3521	1
VIF	1.14	1.21	1.21	1.43	1.1	

Source: author's calculation

The unit root test shows that most of the variables stop at level 0 based on two popular measurement standards, Fisher and ADF, except for the variable TO - Trade openness does not stop at order 0. The authors propose to use the first difference of the TO variable to ensure the stopping of the data series.

Table 3. Stability test

Variables	Augmented Dickey-Fuller tests
GDPG	-8.7201***
GDPCG	-5.7338***
GE	-1.7524**
IN	-7.633***
PCB	-1.9618**
TO	-3.3988***
ESCP	-3.31254***

Source: Author's calculation of the symbols *, **, *** corresponding to the p-value value 10%, 5%, 1%

Wooldridge test is performed to detect a similar correlation phenomenon in table data regression with P-value = 0.1936, leading to accepting the hypothesis H0: there is no correlation phenomenon in the regression model.

The results of the White and Breusch-Pagan test both conclude that the model exists the phenomenon of variance change, with P-value = 0.000 leading to the rejection of the hypothesis H0 accepts hypothesis H1 => existing model variable variance. The authors performed a GLS estimate to correct the variable variance present.

Table 4. Regression results

	Estimates OLS	**Estimates GLS**
GDPCG	0.601023***	0.6010234***
GE	0.0497456**	0.0497456**
IN	0.0009485	0.0009485
PCB	-0.048916***	-0.0489169***
TO	-0.0462666	-0.0462666
ESCP	0.054127***	0.06845121***
_cons	0.979834***	0.9798341***
Number of observations	142	
R-squared	0.8615	

Source: Author's calculation of the symbols *, **, *** corresponding to the p-value value 10%, 5%, 1%

The macroeconomic variables GDPCG - GDP per capita growth, GE - government spending, IN – inflation, and effective supply chain practices (ESCP) show a positive correlation with economic progress, consistent with previous studies.

The variable TO - trade openness shows a negative correlation with economic growth.

The variable PCB has a negative sign and has statistical significance at the 1% level, this shows an inverse relationship between financial progress and economic growth.

5. Discussion and conclusion

This study identifies the impacts particularly positive influences of the supply chain strategies and practices on the financial progress of stock markets and the banking institutions of the country and its overall economic growth. This paper also recognizes the relationship between financial progress and economic growth within the supply chain system. The sample-based study shows that Southeast Asian countries represent that financial progress has a negative influence on economic growth. While the implementation of supply chain management strategies and practices has brought improvement in the progress of financial institutions, and the overall economic growth of the country. This is in contrast to previous empirical studies. High income and low income, in particular, for low-income countries, financial progress has a stronger impact on the country's economic growth). However, with the results of this empirical study, it is evident that financial progress has a negative impact on growth in Southeast Asian countries. This can be explained by an imbalance between financial progress and economic growth in Southeast Asian countries (except Singapore), financial progress may impart a negative impact on the country's economic growth. The results of this study help us to have a more accurate view of the financial progress orientation of countries in Southeast Asia. However, this study conducted after long research and analysis shows the considerable significance of undertaking supply chain management practices in the achievement of better financial progress. In this paper, statistical evidence from Southeast Asian countries shows the positive impacts of supply chain management on economic growth. In addition to the contribution to the progress of financial institutions, this study, with proof, shows the positive impacts of supply chain practices on the achievement of economic growth [27]. The positive influences of the supply chain have also been explained in the linkage between financial progress and economic growth. Due to the time constraints as well as the ability to collect data, the paper has not examined all other factors influencing the linkage between financial progress and economic growth. Therefore, in the next research directions, the authors will look for factors and test the model's stability in other regions of the world.

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